



EDITORIAL

FCAA RELATED NEWS, EVENTS AND BOOKS (FCAA-VOLUME 19-3-2016)

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Dear readers,

in the Editorial Notes we announce news for our journal, anniversaries, information on international meetings, events, new books, etc. related to the FCAA ("Fractional Calculus and Applied Analysis") areas.

1. Reports on Recent Events

"Modern Methods, Problems and Applications of Operator Theory and Harmonic Analysis VI": Conference OTHA-2016, dedicated to the 75th jubilee of Professor Stefan Samko April 24–29, 2016, Rostov-na-Don, Russia

Website: http://otha.sfedu.ru/conf2016/; Conference poster: http://otha.sfedu.ru/upload/documents/conference_poster.pdf

The host universities were: Southern Federal University (sfedu.ru) and Don State Technical University (dstu.ru). The conference was supported by Russian fund for fundamental research (rfbr.ru) and the International Society for Analysis, Applications and Computation (mathisaac.org).

The conference brought together more than 130 researchers from many countries worldwide. There were invited plenary speakers and participants from Russia, Portugal, Sweden, Belorus, Lithuania, Armenia, Columbia, Spain, Mexico, Germany, Uzbekistan, and other countries.

The general core of the conference is related to different areas of mathematics, especially harmonic analysis, functional analysis, operator theory, function theory, differential equations and fractional analysis, developed intensively last decade. Main sessions were: – Functional Analysis and Operator Theory; – Function Theory and Approximation Theory; – Differential Equations and Mathematical Physics; – Probability-Analytical Models and Methods; – Bioinformatics and mathematical modeling; – Intellectual data analysis.

© 2016 Diogenes Co., Sofia pp. 573–579, DOI: 10.1515/fca-2016-0031 On the occasion of Professor Stefan Samko's 75th jubilee, on behalf of all the participants of the conference OTHA-2016 and many others friends and collaborators, we are proud and happy to wish him many further brilliant achievements in the Math, very good health and wellbeing, and all the best in his endeavors! On behalf of Organizing and Program Committees:

Alexey N. Karapetyants

Workshop "Fractality and Fractionality" (FaF) May 17–20, 2016, Lorentz Center, Leiden, The Netherlands

Website: http://www.lorentzcenter.nl/lc/web/2016/779/info.php3?wsid=779&venue=Oort; Workshop poster: http://www.lorentzcenter.nl/lc/web/2016/779/poster.pdf

The Lorentz Center is an international center for scientific workshops, based on the philosophy that science thrives on interaction between creative researchers. Lorentz Center workshops focus on new collaborations and interactions between scientists from different countries and fields, and with varying seniority.

The number of participants in "FaF", about 60, reached the maximum capacity of the Lorentz Center. The organizers were forced to turn down many more applications for attendance. They were very pleased for the great interest from participants abroad, almost all, that confirmed the intended international character of the workshop. Another positive element was the large participation of young researchers.

The scientific program consisted of 29 plenary lectures (many of them by invited speakers) and 6 discussion sessions (pairwise in parallel) devoted to selected research topics. Next to the lectures and organized discussion sessions, the program offered ample time for informal discussions, also stimulated by the organizers through long lunch breaks, as well as shorter breaks between the lectures. These discussions also continued after the scheduled lectures, occasionally until after midnight in small groups. Certainly the excellent facilities of the Lorentz Center played an important role in the success of the workshop.

More details on the conference topics, their interaction and importance, the program and abstracts of talks can be seen at the website menus: – Description and aim of the workshop; – Participants; – Program; – Abstracts (Brochure).

The workshop was concluded by a large round table discussion session. There a number of open problems to work on in the future have been posed. The participants have been invited to submit more open problems to the journal "Modern Stochastics: Theory and Applications" with co-editors-inchief K. Kubilius (participant of the workshop) and Yu. Mishura (organizer

of the workshop). The same journal will also publish a special issue with selected papers with a stochastic content related to the lectures. Selected unpublished papers with an analytic content will be invited for publication in another special issue, of the journal "Fractional Calculus and Applied Analysis" (editor-in-chief V. Kiryakova, participant of the workshop).

The organizers have received many very positive reactions by the participants during the workshop. The high scientific content of the program was praised, as well as the facilities of the Lorentz Center and the very helpful assistance by its staff.

Scientific Organizers: Yuliya Mishura, Georgiy Shevchenko, Peter Spreij, Grygoriy Torbin, Martina Zähle

2. 75th Anniversary of Professor Stefan G. Samko

On March 28, 1941 in the city Rostov-na-Don, Russia, in a family of university professors Grigory Petrovich Samko and Valentina Stepanovna Samko twins were born: Ludmila and Stefan.

During 1958-1964 Stefan Samko was a student of the Physics and Mathematics Faculty of the Rostov State University. That was the time of intense development of science and education at the university, and the Rostov mathematical school was very much influenced by the research advances of Professor Gakhov and his followers and students. Professor Gakhov is known, in particular, by solving the Riemann boundary value problem. In 1964 Stefan Samko entered PhD studies (known as Aspirantura) at the same university in the scientific school of Prof. F.D. Gakhov in the area of Boundary Value Problems (BVP) and Singular Integral Equations (SIE).

Stefan Samko's PhD thesis was devoted to the investigation of solvability of some first kind integral equations, such as generalized Abel integral equation, involving one-sided forms of the fractional integration. He managed to reduce such equations and others to weighted singular integral equations. Related to this subject was a problem of description of functions arising as potentials with some density emerges. The studies of the mentioned above problems lead Stefan Samko to Fractional Calculus (FC), starting from one-dimensional theory and then passing to the multidimensional integro-differentiation. The field of investigation, known as Fractional Calculus, became a permanent scientific interest for Professor Samko.

His interest in spaces of fractional smoothness of Sobolev type, which naturally appear in multi-dimentional fractional calculus, led him in contacts with P.I. Lizorkin from Steklov Mathematical Institute, who influenced very much further scientific interests of Professor Samko. Stefan Samko actively engaged himself into the well known seminar at Steklov

Institute leaded by academician S.M. Nikolskii, and after some short time defended the second degree (Doctor of Sciences) at this institution. His Doctor of Science's thesis was devoted to developing of the so-called apparatus of Hypersingular Integrals.

The impact of Professor Stefan Samko in the field of one-dimensional and multi-dimentional fractional calculus is reflected in his monograph: S. Samko, "Hypersingular Integrals and Their Generalizations" (2001), and in encyclopedic type book "Fractional Integrals and Derivatives", written together with Professors O.I. Marichev and A.A. Kilbas. The second book, published first in Russian (1978, known as the "Red Book") and then extended and translated in English (1993, known as the "White Book"), is really amazing for it contains almost all types and constructions of fractional calculus known from the time of Euler and Liouville and up to date information, along with a deep analysis of the history of the development and stages of the theory.

Without any reservations Stefan Samko made himself one of the top leading scientists in the world in the field of FC and applications. He was Chairman of the International Program Committee of the 1st IFAC Workshop on Fractional Differentiation and its Applications (FDA-04), Bordeaux, France, July 19-21, 2004, and Honorable Chairman of the International Program Committee of the 2nd IFAC Workshop on Fractional Differentiation and its Applications, Porto, Portugal, 19-21 July, 2006.

Stefan Samko is known to collaborate with many people worldwide on different subjects exploring new areas. He is also a good friend who can carry friendship through life, and the research tandem N. Karapetiants - S. Samko showed an example of a lifelong sincere friendship and fruitful scientific work in the field of SIE with Carleman shift and later with a general approach to equations with the so called involutive operator. Their study released in the book: N. Karapetiants, S. Samko, "Equations with Involutive Operators" (2001).

Let us mention also the short but important collaboration of Stefan Samko with Professor Bertram Ross, while S. Samko was a Fulbright Professor at the University of New Haven, USA. One of the breakthrough results in FC at this time, obtained together with Professors E.-R. Love and B. Ross was analogue of the Weierstrass example: their constructed example of a function having at each point all derivatives of order less than one, but nowhere having a first derivative. Also, S. Samko and B. Ross introduced and studied fractional integrals of Riemann-Liouville type with variable order, that may be considered as the first steps of Professor Samko toward the major for his area of research for the last two decades known as Variable Exponent Analysis.

Stefan Samko was one of the pioneers in the field of Variable Exponent Analysis; he and his followers and students managed to obtain very important and breakthrough results in this area. This period of his tenure is already connected with his work as Professor at the University of Algarve, Portugal. For instance, he proved Sobolev theorem in variable exponent Lebesgue spaces (1998), and showed the density of smooth functions in Sobolev spaces with variable exponent (1999).

His interests in this modern field of study may be described as Operators of Harmonic Analysis in various general spaces with non-standard growth. These include, but not bounded to the study of variable order Lebesgue, Holder, Sobolev spaces, Lorentz spaces, Orlich, Morrey type and Campanato spaces, Herz spaces, and others, as well as Singular Integrals and Singular Integral Equations in such spaces, Riesz and Bessel potentials, Maximal and Fractional Operators, other classical operators of harmonic analysis.

An essential part of his resent research in the field of non standard spaces and integral operators appeared this year in the two monographs written by V. Kokilashvili, A. Meskhi, H. Rafeiro and S. Samko: "Integral Operators in Non-Standard Function Spaces, Volume 1: Variable Exponent Lebesgue and Amalgam Spaces" and "Integral Operators in Non-Standard Function Spaces, Volume 2: Variable Exponent Hölder, Morrey-Campanato and Grand Spaces".

Stefan Samko is known as a brilliant teacher. He developed and taught several major courses while working at the Rostov State University and then at the University of Algarve, Portugal. He is a scientific adviser of 21 defended doctoral theses. His students are now working in various countries worldwide.

He was administrator at the Rostov State University: 1979-1981 Dean of the Faculty of Mechanics and Mathematics; 1989-1998 Head of the Department of Differential and Integral Equations; 1980-2001 Chairman of the Scientific Council on the dissertation defence, as well as at University of Algarve: 2003-2005 President of Scientific Council of Mathematical Department.

Short list of highlights:

- He is author of more than 260 research papers and 5 monographs.
- He travels a lot, participating as invited speaker in many conferences worldwide.
- Since 1978 he is organizing conferences and sessions of conferences in Russia (SU), USA, Japan, France, Italy, Turkey, UK, Portugal and Brazil.
- He is a member of Editorial Boards of 13 scientific international journals.

– He was a coordinator of several major Russian and European grants, including INTAS project which united four teams from Finland, Portugal, Georgia, Azerbaijan.

Most of Stefan Samko papers are downloadable from his web-page http://w3.ualg.pt/~ssamko/. There also the full list of papers and monographs along with the other CV-type information.

There is also a very extensive and professionally written review of Stefan Samko research by Professor V. Kokilashvili on the occasion of Professor's Samko 70th jubilee (in: "Operator Theory: Advances and Applications", **229** (2013), 1–48).

Alexey N. Karapetyants

Professor Stefan Grigor'evich Samko has celebrated recently his 75th anniversary. He is among the founding editors of our journal "Fractional Calculus and Applied Analysis" (FCAA), now a Honorary editor.

The list of his publications includes more than 260 research papers and the following books:

- S.G. Samko, A.A. Kilbas, O.I. Marichev, "Fractional Integrals and Derivatives and Some of Their Applications" (In Russian), Nauka i Tekhnika, Minsk (1987):
- N.K. Karapetiants, S.G. Samko, "Equations with an Involutive Operators and Their Applications" (In Russian), Rostov University Publ. House, Rostov-on-Don (1988);
- S.G. Samko, A.A. Kilbas, O.I. Marichev, "Fractional Integrals and Derivatives. Theory and Applications", Gordon & Breach Sci. Publ. (1993);
- N.K. Karapetiants, S.G. Samko, "Equations with Involutive Operators and Their Applications", Birkhäuser, Boston (2001);
- S.G. Samko, "Hypersingular Integrals and Their Applications", Taylor & Francis (2002);
- V. Kokilashvili, A. Meskhi, H. Rafeiro, S. Samko, "Integral Operators in Non-standard Function Spaces, Volume 1: Variable Exponent Lebesgue and Amalgam Spaces", Birkhäuser, Basel (2016);
- V. Kokilashvili, A. Meskhi, H. Rafeiro and S. Samko, "Integral Operators in Non-standard Function Spaces, Volume 2: Variable Exponent Hölder, Morrey-Campanato and Grand Spaces", Birkhäuser, Basel (2016).

These books gave a vast impact to the further development of the fractional calculus and its applications, and obtained hundreds of citations, including by authors in the journal "Fract. Calc. Appl. Anal.".

More detailed CV and list of publications of Prof. Samko can be found at his website: http://w3.ualg.pt/~ssamko/ and previous special issues of our journal, namely:

- "60th Anniversary of Professor S. Samko (Letters by the Editor, N. Karapetiants and A. Kilbas, B. Rubin)", In: *Fract. Calc. Appl. Anal.* 4, No 1 (2001), pp. 113–116;
- "CV and List of Publications of S. Samko", In: above issue, pp. 117–130;
- "70th Anniversary of Professor Stefan Samko, Editor of FCAA", "Main directions of S.G. Samko's results having an essential influence on the establishing and development of the theory of fractional differential equations (by S. Rogosin)" In: *Fract. Calc. Appl. Anal.* **14**, No 3 (2011), Sect. 5 of Edit. Note, pp. 328–333; DOI: 10.2478/s13540-011-0020-x; http://www.degruyter.com/view/j/fca.2011.14.issue-3/

issue-files/fca.2011.14.issue-3.xml.

Many of the Editors and Authors in FCAA journal have been happy to collaborate with Professor Stefan Samko, always active and enthusiastic, keeping permanent interest in various mathematical ideas and problems. His friends and colleagues lovely call him Stiva.

On behalf of the Editorial Board, we express to Stiva, his wife Natasha and family our best wishes and regards.

A part of the articles in this journal's issue No 3 have been invited or selected among the already accepted ones, as closely related to Prof. Samko's research interests and/or his research group.

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